

Appl. No. 10/053,865
Amdt. dated May 5, 2004
Reply to Office action of March 5, 2004

REMARKS/ARGUMENTS

In the Final Office Action mailed March 5, 2004, claims 13-21 were rejected under 35 U.S.C. § 112, second paragraph. In addition, claims 14 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,101,244 to *Mori et al.* Finally, claims 1-4, 6-11 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Mori et al.* in view of U.S. Patent No. 6,184,545 to *Werner et al.*

A. The Rejection of Claims 13-21 under § 112, Second Paragraph

Claims 13, 14 and 18 stand rejected under 35 U.S.C. § 112, second paragraph, for reciting "an edge area of said Schottky barrier diode". The rejection of claims 13-21 under 35 U.S.C. § 112, second paragraph, is respectfully traversed.

Support for this limitation is found in drawing FIGS. 4 and 5 and in the corresponding specification text at page 8, line 25 through page 9, line 16. Specifically, drawing FIGS. 4 and 5 show a "plurality of p type columns 13" (page 9, line 3) some of which are coupled to the metal layer 12 through silicide layer 11 (active area) and some of which are not (edge area). The description at pages 8 and 9 and drawing FIGS. 4 and 5 is therefore deemed to describe the claimed invention in sufficient detail to apprise a person of ordinary skill in the appropriate art of the scope of claims 13, 14 and 18. Claims 13, 14 and 18 are therefore deemed to be allowable under 35 U.S.C. § 112, second paragraph.

Claims 15-17 and 19-21 are also deemed to be allowable as being dependent upon an allowable base claim. Accordingly, withdrawal of the rejection of claims 13-21 under 35 U.S.C. § 112, second paragraph, is respectfully requested.

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B. The Rejection of Claims 14 and 18 under § 102(b)

Claims 14 and 18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,101,244 to *Mori et al.* The rejection of claims 14 and 18 under 35 U.S.C. § 102(b) as is respectfully traversed.

As noted above, claims 14 and 18 both recite at least one doped region in "an edge area of said Schottky barrier diode", which is not taught in *Mori et al.* FIG. 1A of *Mori et al* shows that all of the "doped regions" 15 are coupled to the metal layer 3, which as noted above is the "active area".

Claims 14 and 18, therefore, are deemed to be allowable under 35 U.S.C. § 102(b) over *Mori et al* as containing at least one limitation not taught therein and the withdrawal of the rejection of claims 14 and 18 is respectfully requested.

C. The Rejection of Claims 1-4, 6-11 and 13 under § 103(a)

Claims 1-4, 6-11 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Mori et al* in view of U.S. Patent No. 6,184,545 to *Werner et al.* This rejection is respectfully traversed because the hypothetical combination of references does not produce the claimed invention.

Claim 1 recites that the doped regions of the second conductive type (p type columns 13) are "separated from the other doped region and said substrate region by portions of said semiconductor layer", which is a bona fide structural limitation.

Note that in *Mori et al* the "p type" regions 15 are not separated from each other by portions of the semiconductor layer 14, as claimed, but are interconnected with the same polarity type regions 16 placed between two adjacent regions 15. Because of this structural difference, it is not possible to balance the charge in the semiconductor layer 14 of *Mori et al* as claimed.

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The addition of the teachings in *Werner et al* do not negate the interconnectivity of the "p type" regions 15 with the "p type" regions 16 taught in *Mori et al*.

Note also that the "p type" regions 8 of *Werner et al*, while separated from each other, are not separated from the substrate as claimed.

It is therefore deemed that the combination of *Mori et al* and *Werner et al* thus fails under 35 U.S.C. § 103(a) because the hypothetical combination of these two references does not actually produce the invention of claim 1.

For at least these two reasons, neither *Mori et al* nor *Werner et al*, alone or in combination, describe or suggest every element of claim 1. Claims 2-4, 6-11 and 13 which depend from claim 1, also include all the elements of claim 1. Accordingly, withdrawal of the rejection of claims 1-4 and 6-11 and 13 under 35 U.S.C. § 103(a) over *Mori et al* in view of *Werner et al* is respectfully requested.

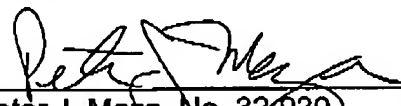
D. Conclusion

In view of all of the above, claims 1-4 and 6-21 are believed to be allowable and the case in condition for allowance, which action is respectfully requested.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

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Peter J. Meza, No. 32,920
Hogan & Hartson LLP
One Tabor Center
1200 17th Street, Suite 1500
Denver, Colorado 80202
(719) 448-5906 Tel